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Taxonomic status of *Parapercis elongata* (Teleostei: Pinguipedidae), with comments on its authorship

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Abstract

The validity and authorship of *Parapercis elongata* are discussed. Although Fourmanoir (1967) has been considered to be the author of *P. elongata*, Fourmanoir (1965) satisfies the nomenclatural requirements associated with the availability of species names and *P. elongata* Fourmanoir, 1965 has priority over *P. elongata* of Fourmanoir, 1967. Although the holotype of *P. elongata* was not able to be conclusively determined, no significant differences were recognized between the original description of *P. elongata* and the holotype and non-types of *Parapercis alboguttata* (Günther, 1872). Accordingly, *P. elongata* Fourmanoir, 1965 is determined to be a junior synonym of *P. alboguttata*.

Key words: *Parapercis elongata*; *Parapercis alboguttata*; synonym; nomenclature

Introduction

The pinguipedid *Parapercis elongata* has been considered to be originally described by Fourmanoir (1967) based on the specimens collected from Nha-Trang, Vietnam, South China Sea. However, it is demonstrated in this study that the authorship of *P. elongata* should be attributed to Fourmanoir (1965). Fourmanoir (1965) designated the holotype of *P. elongata*, but he did not quote a catalog number. Eschmeyer (1998) also did not provide a catalog number for the holotype.

Randall (2001) formulated a key to species of pinguipedids occurring in the southwestern Pacific and regarded *P. elongata* as a valid species. Prokofiev (2008) examined a specimen labeled as "*Parapercis elongata* sp. nov., no. 45283" deposited at the Institute of Oceanography, Nha-Trang and identified the specimen as *Parapercis alboguttata* (Günther, 1872). He found inconsistencies between the specimen and the description of *P. elongata* by Fourmanoir (1967), speculated that the true holotype of this species may have been lost, but provisionally regarded *P. elongata* as a valid species. Although Fourmanoir (1967) reported *P. elongata* as common in Nha-Trang Bay, this species has not been recorded after the original description (Randall, 2001; Prokofiev, 2008). In this study we clarify the taxonomic status of *P. elongata*.

Materials and methods

Counts and measurements were made according to Imamura & Yoshino (2007). Standard and head lengths are abbreviated as SL and HL, respectively. The institutional abbreviations follow Eschmeyer (1998), except for Hokkaido University Museum, Hakodate (HUMZ), National Museum of Nature and Science, Tsukuba (NSMT), and Department of Marine Sciences, University of the Ryukyus (specimens from the latter now deposited at Ocean Expo. Research Center, Okinawa) (URM).

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Results and discussion

It has been considered that *Parapercis elongata* was originally described by Fourmanoir (1967) (Eschmeyer, 1998; Randall, 2001); however, Fourmanoir (1965) described *Parapercis* sp. as having the same characters as *P. elongata*. Furthermore, the drawing of *Parapercis* sp. shown by Fourmanoir (1965) and that of *P. elongata* by Fourmanoir (1967) are identical (Fig. 1), thus *Parapercis* sp. of Fourmanoir (1965) and *P. elongata* of Fourmanoir (1967) are considered to be the same species. Fourmanoir (1965:112) listed the name *Parapercis elongata* in the index of that publication, referring to his *Parapercis* sp. on p. 46–47. He also mentions the species name *elongata* in the description, comparing the caudal fin shape of the latter with *P. ommatura* Jordan & Snyder, 1902. The species name *elongata* is unambiguously linked with the description of the species shown as *Parapercis* sp. in the same publication. Fourmanoir's (1965) action therefore satisfies the nomenclatural requirements associated with the availability of species names (ICZN, 1999: Chap. 4). Consequently, *Parapercis elongata* Fourmanoir, 1965 is regarded as an available name and has priority over *Parapercis elongata* of Fourmanoir (1967).

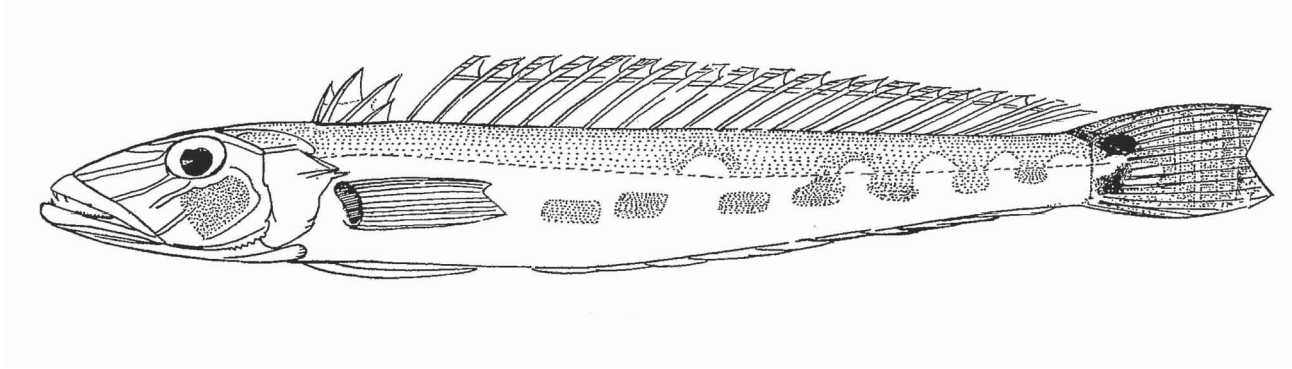

FIGURE 1. Drawing of *Parapercis elongata*, shown as *Parapercis* sp. by Fourmanoir (1965).

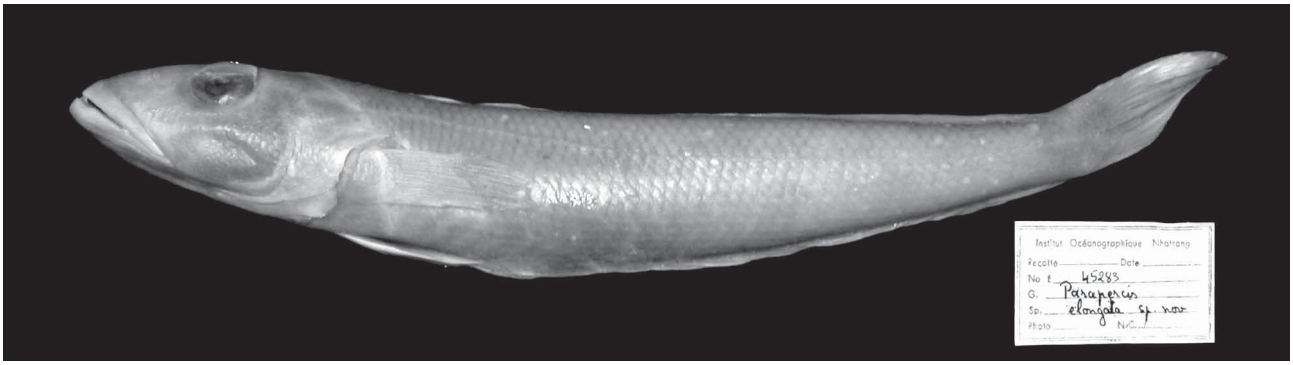

FIGURE 2. Lateral view of *Parapercis alboguttata* labeled as "*Parapercis elongata* sp. nov., no. 45283", deposited at Institute of Oceanography, Nha-Trang, 226.0 mm SL, collected from Be fish market, Nha-Trang Bay, Vietnam.

FIGURE 3. Lateral view of *Parapercis alboguttata*, holotype, BMNH 1870.8.31.131, 127.7 mm SL, collected from Misool Island, Irian Jaya, Indonesia.

We examined a specimen labeled as "*Parapercis elongata* sp. nov., no. 45283", deposited at the Institute of Oceanography, Nha-Trang (Fig. 2). According to the label on the jar, this specimen was collected from Be fish market, Nha-Trang Bay, on 4 September 1963. As Fourmanoir had been in Nha-Trang for 9 months since June 1963 (Fourmanoir, 1965; Séret, 2007), this specimen is possibly one of the type specimens of *P. elongata* collected and identified by Fourmanoir. Although the description of *P. elongata* was based on 10 specimens and Fourmanoir (1965) designated its holotype, he did not document catalog numbers for the 9 paratypes, or comment on where they were to be deposited (Eschmeyer, 1998). These specimens are not deposited at MNHN (Causse, pers. comm. 1 Feb. 2010), where Fourmanoir studied. Fourmanoir (1965) did however report that the holotype of *P. elongata* was deposited at the Institute of Oceanography, Nha-Trang. Therefore, the specimen labeled as *Parapercis elongata* sp. nov. might be the holotype of *P. elongata*.

Prokofiev (2008) also examined the same specimen and discussed its type status. He pointed out that this specimen was conspecific with *P. alboguttata* and noted the differences between *P. elongata* described by Fourmanoir (1967) and this specimen: i.e., caudal fin weakly concaved (deeply concaved in *P. elongata*), total anal fin rays 19 (versus 17 in *P. elongata*), and scales above lateral line 5 (versus 7 in *P. elongata*) [Prokofiev (2008) interpreted the original description as stating *P. elongata* had 7, apparently from Fourmanoir's quotation of "L/H 7"]. As a result, he indicated that it was possible that the holotype of *P. elongata* was lost and the label of "*Parapercis elongata* sp. nov." was mistakenly given for a non-type specimen of *P. alboguttata*. In this study we reconfirm the identification of this specimen as *P. alboguttata* by having the following characters: V, 22 dorsal fin rays, I, 19 anal fin rays, 59 pored lateral line scales (Table 1), lower jaw protruding anteriorly beyond tip of upper jaw, 3 canine teeth on each side of lower jaw, vomerine teeth present, palatine teeth absent, lower margin of preopercle serrated, 4th dorsal fin spine longest and membrane from fifth dorsal spine connected to first dorsal soft ray near its base, dorsal soft rays not elongate, and caudal fin slightly concaved, upper and lower parts of caudal fin not elongate. As the type status of this specimen is unclear from the label and all other available information, and no alternative type specimen could be located, the validity of *P. elongata* is discussed based on the original description of the species.

Coloration is regarded as a very important character for taxonomy of species of *Parapercis*. Fourmanoir (1965) described *P. elongata* as having the following coloration: head purplish and preopercle orangish, snout with 3 yellow lines, tip of dorsal fin rays with a longitudinal white line, paired spots on caudal fin base, upper one darkish brown, lower gray, caudal fin with gray and transparent narrow lines alternately. Additionally, according to the drawing of *P. elongata* (Fig. 1) shown by Fourmanoir (1965), this species possesses a series of spots along the lower part of the body, no black spots on any of the fins, and the pelvic fin pale. This coloration agrees well with that of *P. alboguttata* (Randall, 1995; Peristiwady & Achmad, 2009; Imamura, 2009; this study). Although the holotype of *P. alboguttata* is now mostly faded, faint paired spots on the caudal fin base were recognized (Fig. 3). Günther (1872) described this species as having a series of spots on the lower part of the body and no distinctive markings on the fins. These characters also well fit to those in *P. elongata*. Therefore, no significant differences in coloration are recognized between *P. elongata* and *P. alboguttata*. Although Prokofiev (2008) pointed out that *P. alboguttata* lacks paired spots on the caudal fin base and this character can distinguish *P. elongata* and *P. alboguttata*, this statement is erroneous. Additionally, Fourmanoir (1965) described the lower margin of the preopercle as serrated, the opercular spine robust and the caudal fin concaved. According to the drawing of *P. elongata* (Fig. 1) made by Fourmanoir (1965), the subopercle has some spines, and the lower jaw protrudes anteriorly beyond the tip of the upper jaw. These morphological characters also agree with those of *P. alboguttata*.

In contrast, several morphological differences between the descriptions of *P. elongata* and *P. alboguttata* are recognized. Fourmanoir (1965) described *P. elongata* as having 70 lateral line scales ["Ligne latérale (nombre d'écaille)" in French in original description]. Randall (2001) recognized this number to be pored lateral line scales and used it as a taxonomic character separating *P. elongata* from other species of *Parapercis* distributed in the southwestern Pacific [except for *Parapercis nebulosa* (Quoy & Gaimard, 1825)]. However, Fourmanoir (1965) did not provide detailed methods for counting "lateral line scales" and it is unclear whether his counts refer to pored lateral line scales, scales on a longitudinal row, or whether scales on the base of the caudal fin are included, or not. Historically, authors have used various methods, for example Cantwell (1964) counted the number of oblique rows of scales crossing the first lengthwise row just above the lateral line as the number of scales in a longitudinal row, instead of the number of pored lateral line scales. As the method of counting by Fourmanoir (1965) is unknown, we cannot compare and discuss pored lateral line scale counts between *P. elongata* and *P. alboguttata*. The specimen labeled as "*Parapercis elongata* sp. nov." deposited at Institute of Oceanography, Nha-Trang has 59 pored lateral line scales.

TABLE 1. Counts and proportional measurements of *Parapercis alboguttata*.

	No. 45283 deposited at Inst. Oceanogr., Nha-Trang	Holotype BMNH 1870.8.31.131	Non-types (n = 18)
SL (mm)	226.0	127.7	57.9–191.6
Counts			
Dorsal fin rays	V, 22	V, 22	V, 22
Anal fin lays	I, 19	I, 18	I, 18
Pectoral fin rays	19	17	18–19
Pelvic fin rays	I, 5	I, 5	I, 5
Pored lateral line scales	59	59	58–62
Proportional measurements (% SL)			
HL	30.9	30.5	28.7–30.8
Predorsal length	29.1	30.5	27.9–30.9
Length of dorsal fin base	62.8	65.1	62.0–66.6
1st dorsal fin spine length	3.0	2.5	1.8–4.7
Longest dorsal fin spine length (4th)	7.1	8.2	6.0–8.8
Preanal length	46.1	47.1	43.8–48.5
Length of anal fin base	49.2	46.0	45.2–48.6
Anal fin spine length	3.5	6.4	4.5–7.6
Caudal peduncle depth	6.5	7.0	6.2–8.1
Caudal peduncle length	8.8	8.2	7.3–9.3
Pectoral fin length	14.8	Broken	14.4–17.6
Pelvic fin length	16.4	20.0	17.2–23.8
Caudal fin length	18.4	Broken	17.5–23.6
Proportional measurements (% HL)			
Snout length	Unmeasured	29.0	27.2–38.0
Upper jaw length	41.3	37.8	37.3–43.4
Lower jaw length	46.4	46.0	39.3–45.9
Fleshy part of interorbital width	16	12.1	11.9–21.1
Bony part of interorbital width	12.6	8.0	4.2–16.4
Orbital diameter	21.8	28.0	24.2–34.5

Fourmanoir (1965) described the dorsal fin of *P. elongata* as composed of 5 spines, 3rd spine longest, and spinous portion separated from soft-ray portion. In contrast, all specimens of *P. alboguttata* observed in this study have 5 dorsal fin spines, the 4th spine longest, and the membrane from the fifth dorsal spine connected with the first dorsal soft ray near its base. However, Randall (1995) reported 3rd or 4th spine being longest in *P. alboguttata*. In addition, spinous and soft-ray portions of the dorsal fin are narrowly or broadly continuous in all species of *Parapercis* (e.g. Cantwell, 1964; Heemstra, 1986; Shimada, 2002; Randall, 2008). Therefore, it is highly possible that Fourmanoir (1965) overlooked the connection of the spinous and soft ray portions in *P. elongata*.

Fourmanoir (1965) described *P. elongata* as having 5 spines and 21–22 soft rays in the dorsal fin (vs. 5 spines and 22 soft rays in *P. alboguttata*), and a single spine and 16 soft rays on the anal fin (vs. a single spine and 18–19 soft rays) (data of *P. alboguttata* from Randall, 1995 and this study). However, species of *Parapercis* with 5 spines and 21–22 soft rays in the dorsal fin generally have 17 or more anal soft rays, and no species of the genus are

known to have 22 dorsal fin soft rays and 16 anal soft rays (e.g. Cantwell, 1964; Schultz, 1968; Heemstra, 1986; Shimada, 2002; Randall, 2008). The possible holotype of *P. elongata* in the Institute of Oceanography, Nha-Trang was also found to have 19 anal fin soft rays. We infer Fourmanoir (1965) mistakenly counted the number of the anal fin rays.

Fourmanoir (1965) reported the snout length was 2 times in the orbital diameter, whereas the snout length and orbital diameter are almost equal in the holotype of *P. alboguttata*. However, it is shown in this study that the snout length of *P. alboguttata* gradually becomes longer with growth (Fig. 4). Therefore, no significant difference in the relationship between snout length and the orbital diameter is recognized between *P. elongata* and *P. alboguttata* and the two species clearly cannot be separated by this relationship.

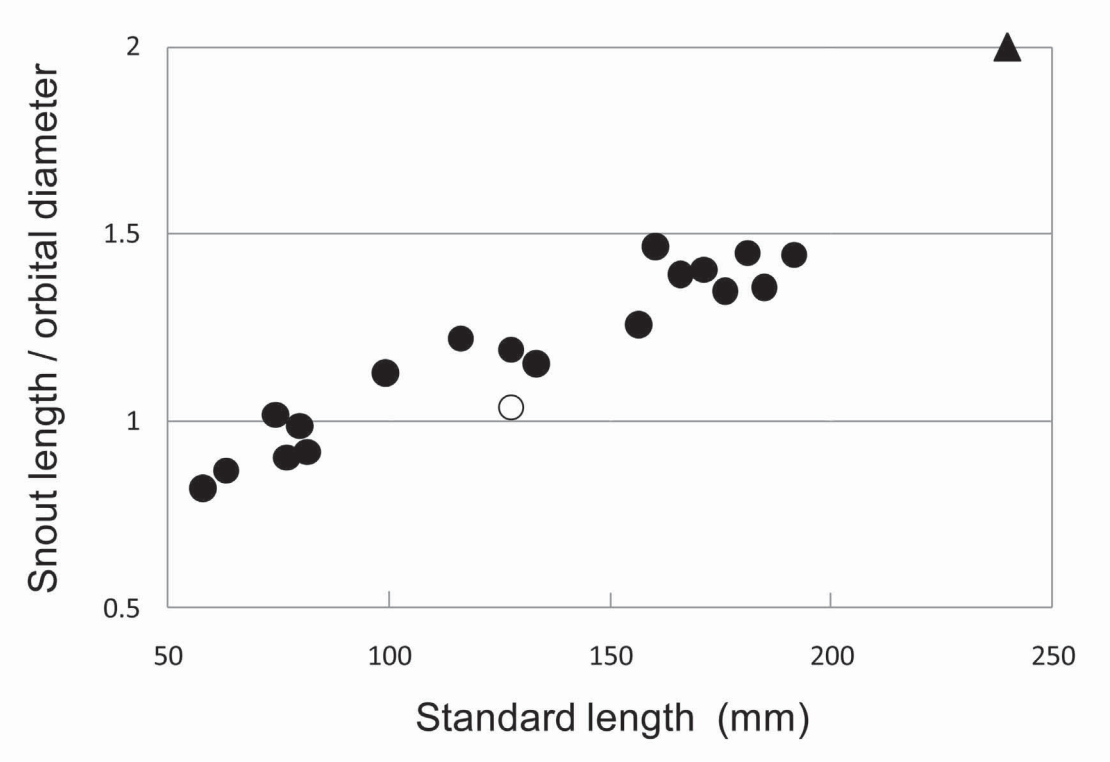

FIGURE 4. Relationship of snout length versus orbital diameter. Solid triangle, *Parapercis elongata* (data from Fourmanoir, 1965); open circle, holotype of *P. alboguttata*; solid circle, non-types of *P. alboguttata*.

In conclusion, no significant differences between *P. elongata* and *P. alboguttata* are recognized, and they are determined to be conspecific; thus we conclude *P. elongata* to be a junior synonym of *P. alboguttata*.

Fourmanoir (1965) described the following 4 species of *Parapercis* from Nha-Trang: *Parapercis pulchella* (Temminck & Schlegel, 1843), *Parapercis filamentosa* (Steindachner, 1878), *Parapercis clathrata* Ogilby, 1910 (figure only), and *P. elongata*. He reported *P. pulchella* and *P. elongata* to be common species in Nha-Trang. We collected fish specimens in Nha-Trang on 2004 and recognized *P. pulchella* and *P. alboguttata* to be common species there. No specimens were found that agreed well with the original description of *P. elongata* (thus having characters such as V-21–22 dorsal fin rays and I, 16 anal fin rays). Based on these findings, we consider that Fourmanoir mistakenly recognized *P. alboguttata*, a species now known to be common in the area, as *P. elongata*. This assumption supports the conclusions drawn from our morphological comparisons.

Material examined

Parapercis alboguttata (20 specimens): BMNH 1870.8.31.131, holotype, 127.7 mm SL, Misool Island, Irian Jaya, Indonesia; No. 45283, deposited at Institute of Oceanography, Nha-Trang, 226.0 mm SL, Be fish market, 4 Sep. 1963; HUMZ 87663, 1 specimen, 160.3 mm SL, South China Sea, collected date unknown; HUMZ 190504, 190545–19551, 8 specimens, 57.9–116.2 mm SL, Nha-Trang fish landing port, Vietnam, South China Sea, 8 Oct.

2004; HUMZ 205074, 1 specimen, 171.2 mm SL, Ranong fish market, Ranong Province, Thailand, Andaman Sea, 25 Apr. 2009; HUMZ 211441, 1 specimen, 191.6 mm SL, Phuket fishing port, Phuket, Thailand, Andaman Sea, 21 Apr. 2011; URM-P 12451, 1 specimen, 176.1 mm SL, Songkhla fish landing port, Thailand, South China Sea, 25 Oct. 1983; URM-P 27583, 1 specimen, 156.5 mm SL, Songkhla fish landing port, Thailand, South China Sea, 22 Dec.1991; URM-P 29026, 1 specimen, 185.1 mm SL, Bangkok fish landing port, Thailand, South China Sea, 29 Oct. 1992; URM-P 29124, 1 specimen, 133.4 mm SL, Bangkok fish landing port, Thailand, South China Sea, 23 Nov. 1992; URM-P 29189–29190, 2 specimens, 166.1–181.2 mm SL, Bangkok fish landing port, Thailand, South China Sea, 28 Dec. 1992; URM-P 42183, 1 specimen, Phuket, Thailand, Andaman Sea, 24 Sep. 2003.

Parapercis pulchella (6 specimens): HUMZ 190452, 1 specimen, Dum Market, Nha-Trang, Vietnam, 9 Oct. 2004; HUMZ 190574, 190601–190604, 5 specimens, Nha-Trang fish landing port, Vietnam, South China Sea, 8 Oct. 2004.

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